

**Transportation Information System (TIS) Recovery
Questions and Answers**

No	RFP Reference	Questions
1.	RFP Submission	<p>The State has provided significant amount of documentation along with the RFP. In order for us to review these and develop a beneficial proposal, we would require more time. Hence we request the State to extend the proposal submission deadline to at least 2/23/2010.</p> <p>Mn/DOT will extend the proposal due date to Friday, February 26, 2010, 2:00pm. Extension to 2/26 is fine to allow best possible response.</p>
2.	Cost Proposal	<p>Please confirm that vendors will be paid an hourly cost for services performed and that hourly rates should not exceed those stated in the 902TS master contract.</p> <p>As cost is part of the evaluation, the vendor should include a fixed cost to cover the work they need to accomplish as part of this project. See section 12.8 regarding cost proposals.</p>
3.	Section 5.1	<p>Compliance with Statewide Enterprise Architecture: Please clarify the relevance of this requirement since the project is predominantly to develop documentation for an existing system.</p> <p>You have properly pointed out that there is little relevance for this project. However, documentation produced should be accessible from our products within our Statewide standards (MS Office) if not in a common sharable format (PDF, web-based, etc).</p>
4.	Section 6 (Page 4)	<p>Please clarify whether MNDOT is expecting vendors to provide only one PM, one System Analysis and One trainer OR Can vendors propose multiple resources for the above job classifications?</p> <p>Vendors should specify the resources they feel would be needed to accomplish the work. From Mn/DOT's perspective, one Project Manager would manage the project as it is anticipated to be of relatively short duration.</p>
5.	Section 1.5	<p>Please confirm that vendors can submit proposals that leverage having vendor resources work both on site at MnDOT offices and offsite?</p> <p>Vendors may leverage off-site resources. Significant interaction is expected on-site, however. Any needed interviews or discussions should be done with on-site resources.</p>
6.	Section 1.5	<p>For offsite based analysis, vendors will require access to MnDOT systems. Please confirm that MNDOT will provide VPN based access to the mainframe so that we can remotely access and analyze the system components?</p> <p>We believe this to be possible, but access to the Mainframe is maintained by a separate agency, the Office of Enterprise Technology. We are currently investigating the process to allow VPN based access directly to the TIS program.</p>
7.		<p>Will MNDOT provide vendors access to download of ALL source code and files associated with the TIS system for us to perform offsite analysis?</p> <p>Yes.</p>
8.	Exhibit A – non – tabular contents	<p>Please provide clarification regarding user commands: Are these commands executed from the CLIST panels? Can you provide some samples for us to get a better understanding of what you mean by commands?</p> <p>The majority of the commands are actions carried out by the users by submitting a JCL job setup with the appropriate command and various specified parameters. An example of one such command is included in</p>

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		<p>the attached document, FACTOR-ADT-FILE Command Example.doc. In the example, the command is discussed, the parameter options are listed, and a sample job set up is included.</p> <p>TIS does have Clist panels, but they are used mostly for online browse, list and update and only available for certain applications, such as TRAFFIC, Accidents and Roadway History. Although TIS user can generate reports online using menu but the report types are limited and no user command can be executed directly from Clist panels.</p>
9.	Exhibit A – non – tabular contents	<p>Will MNDOT SME's be able to identify which of the user commands are obsolete and which are still being used ?</p> <p>Yes. As part of the interview process for the various SME's, the vendor should be able to obtain a list of the still used commands.</p>
10.	Exhibit A	<p>What type of files are the files mentioned on page 24 ? Are these VSAM files ? Are they physical sequential files ? Please clarify file organization</p> <p>See attached file – ALLOCATION OF FILES.doc. Most files are VSAM.</p>
11.		<p>Is a database being used to store the data or are the data being stored in ISAM/VSAM/PS/PDS files ? Please clarify.</p> <p>Data is stored in VSAM files.</p>
12.	Programming consistency	<p>If we were to use a tool driven approach to extract the system components from the programs, can we assume that the programming uses consistent INCLUDED and CALL statements ?</p> <p>The system was developed over 35 years. It is unknown if this is a safe assumption given this time span.</p>
13.	Section 2.2.1 Documentation Deliverables	<p>Do you have a template in place for us to provide the documentation deliverables specified in section 2.2.1?</p> <p>No template exists for this data at this time. Vendor is free to use a format convenient to them.</p>
14.		<p>What kind of navigation required for the documentation deliverable -</p> <ul style="list-style-type: none"> ○ data entity level ○ program level ○ functionality level ○ work flow level <p>Please specify clearly the type of documentation required</p> <p>In previous data documentation work, vendors have supplied documentation deliverables in an integrated package – a web-based product that allows users to link between data, programs, functions, and work flows. If such a product is supplied, any associated tools to navigate the deliverables would be required. If documentation is simply a collection of MSWord Documents, the necessary navigation tools may be nothing more than an index of the various documents and directory structure in which they are found. This requirement is meant to cover whatever tools or documentation is needed to access and use the deliverables developed by the vendor.</p>
15.		<p>Can you please provide a Complexity breakdown OR LOC List of PI1 and Assembler programs?</p> <p>TIS has about 1,733 PL/1 members with about 418,694 lines of codes and 388 IBM Assembler members according to documentation. PL/1 programs are written for applications and Assembler are written mostly for utility functions.</p>

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		<p>For example, a new TIS user has to be registered in order to run a TIS report. In this case, Assembler programs are used to check if the new user's name is matched against the valid user name list. Once the security is checked, the command is passed to the PL/1 program. The PL/1 program processes the user command and then acquires the necessary VSAM datasets and performs its functions.</p> <p>TIS is a standalone and old fashion system, basically a lot of nuts and bolts. Necessary tasks and utility functions have to be built, Maintained, and supported from them. In fact, as time goes by, many functionalities have been lost as their original purposes are no longer used or remembered. People come and go, but program remains there - that's what we are really needing a recovery effort in the current TIS system.</p>
16.		<p>Do you anticipate missing programs/components in the inventory? If so, what percent? If components source files are missing, will we be allowed to execute the same in test environment to detect functionality?</p> <p>We do not anticipate missing programs or components in the inventory.</p>
17.		<p>How are the data stored? DASD or Tapes?</p> <p>DASD, with some backup on tapes.</p>
18.		<p>Are there any restrictions that prevent vendors from having vendor personnel work both onsite in St. Paul, MN and from an offshore IBM Mainframe Application Competence Center located in Montreal, Canada?</p> <p>This is acceptable. See response to question 5.</p>
19.		<p>Does MNDOT have any debugging tools (such as Xpedit) compatible with PL/1 and Assembler programs that can be used to insert 'probes' in the code to determine logic-path during the execution of various business workflows? Please provide details of the tools available ; indicate tool name and version numbers?</p> <p>At this time, Mn/DOT does not have any debugging tools compatible with the PL/1 or Assembler programs.</p>
20.		<p>Will MNDOT provide to vendors debugging tools mentioned in previous questions in order for us to use during the project.</p> <p>Unfortunately, see answer to question 19.</p>
21.	2.1.8	<p>What is meant by "2.1.8 Adhere to Mn/DOT's Project Documentation."? What in this documentation pertains specifically to this project and can we get a copy?</p> <p>See attached documentation.</p>
22.	2.1.4	<p>How many will need to be trained in "2.1.4 Provide formal training and knowledge transfer to key Mn/DOT staff as specified in this SOW.? Will we be training all staff? What is the count? Are they located at multiple sites?</p> <p>Key Mn/DOT staff covers up to 12 key individuals in project, including:</p> <ul style="list-style-type: none"> • Mn/DOT's project manager (1) • TDA Office Director (1)

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		<ul style="list-style-type: none">• Up to 7 SME's as identified in SOW (7)• Up to three other Mn/DOT staff as designated by TDA and OITS staff (3) <p>All will be in a single location for the training. Training and knowledge transfer is to include:</p> <ul style="list-style-type: none">• Overview of the key findings of the project• Means of accessing and navigating deliverables for further analysis
23.		<p>What role, if any, will the original developer have in this project?</p> <p>At this point the original developer is not under contract, so no role is anticipated.</p>

ALLOCATION OF FILES

The Batch-processing Load Library

The load library is a partitioned dataset. The records are of undefined length.

The load library has the following characteristics:

Data set name:MHD.JOBLIB02
Record format:U (undefined length)
Record length:undefined
Block size: 7294
Number of directory blocks: 110
Space allocated: 78 cylinders

The following job setup can be used to allocate the file:

```
//jobname JOB ....  
// EXEC PGM=IEFBR14  
//CODLST DD UNIT=SYSDA,DISP=(NEW,CATLG),DSN=MHD.JOBLIB02,  
// SPACE=(CYL,(78,,110)),DCB=(RECFM=U,DSORG=PO,  
// BLKSIZE=7924),VOL=SER=volser
```

The ISPF CLIST Library

The ISPF CLIST library is a partitioned dataset. The records are fixed length 80 bytes.

The ISPF CLIST library has the following characteristics:

Data set name:TRN.RI00LIBC
Record format:FB (fixed-length blocked)
Record length:80
Block size: 3120
Number of directory blocks: 28
Space allocated: 25 tracks

The following job setup can be used to allocate the file:

```
//jobname JOB ....  
// EXEC PGM=IEFBR14  
//ALLOC DD UNIT=SYSDA,DISP=(NEW,CATLG),DSN=TRN.RI00LIBC,  
// SPACE=(TRK,(25,,28)),DCB=(RECFM=FB,DSORG=PO,LRECL=80,  
// BLKSIZE=3120),VOL=SER=volser
```

The On-line processing Load Library

The load library is a partitioned dataset. The records are of undefined length.

The load library has the following characteristics:

Data set name:TRN.RI00LIBL
Record format:U (undefined length)
Record length:undefined
Block size: 13030
Number of directory blocks: 20
Space allocated: 20 cylinders

The following job setup can be used to allocate the file:

```
//jobname JOB ....  
// EXEC PGM=IEFBR14  
//ALLOC DD UNIT=SYSDA,DISP=(NEW,CATLG),DSN=TRN.RI00LIBL,  
// SPACE=(CYL,(20,,20)),DCB=(RECFM=U,DSORG=PO,  
// BLKSIZE=13030),VOL=SER=volser
```

The ISPF Messages Library

The ISPF messages library is a partitioned dataset. The records are fixed-length 80 bytes.

The ISPF messages library has the following characteristics:

Data set name:TRN.RI00LIBM
Record format:FB (fixed-length blocked)
Record length:80
Block size: 3120
Number of directory blocks: 10
Space allocated: 10 tracks

The following job setup can be used to allocate the file:

```
//jobname JOB ....  
// EXEC PGM=IEFBR14  
//ALLOC DD UNIT=SYSDA,DISP=(NEW,CATLG),DSN=TRN.RI00LIBM,  
// SPACE=(TRK,(10,,10)),DCB=(RECFM=FB,DSORG=PO,LRECL=80,  
// BLKSIZE=3120),VOL=SER=volser
```

The ISPF Panels Library

The ISPF panels library is a partitioned dataset. The records are fixed-length 80 bytes.

The ISPF panels library has the following characteristics:

Data set name:TRN.RI00LIBP
Record format:FB (fixed-length blocked)
Record length:80
Block size: 3120
Number of directory blocks: 90
Space allocated: 54 tracks

The following job setup can be used to allocate the file:

```
//jobname JOB ....  
// EXEC PGM=IEFBR14  
//ALLOC DD UNIT=SYSDA,DISP=(NEW,CATLG),DSN=TRN.RI00LIBP,  
// SPACE=(TRK,(54,,90)),DCB=(RECFM=FB,DSORG=PO,LRECL=80,  
// BLKSIZE=3120),VOL=SER=volser
```

The ISPF Skeletons Library

The ISPF skeletons library is a partitioned dataset. The records are fixed-length 80 bytes.

The ISPF skeletons library has the following characteristics:

Data set name:TRN.RI00LIBS
Record format:FB (fixed-length blocked)
Record length:80
Block size: 3120
Number of directory blocks: 15
Space allocated: 6 tracks

The following job setup can be used to allocate the file:

```
//jobname JOB ....  
// EXEC PGM=IEFBR14  
//ALLOC DD UNIT=SYSDA,DISP=(NEW,CATLG),DSN=TRN.RI00LIBS,  
// SPACE=(TRK,(6,,15)),DCB=(RECFM=FB,DSORG=PO,LRECL=80,  
// BLKSIZE=3120),VOL=SER=volser
```

The ISPF Tutorials Library

The ISPF tutorials library is a partitioned dataset. The records are fixed-length 80 bytes.

The ISPF tutorials library has the following characteristics:

Data set name:TRN.RI00LIBT
Record format:FB (fixed-length blocked)
Record length:80
Block size: 3120
Number of directory blocks: 90
Space allocated: 55 tracks

The following job setup can be used to allocate the file:

```
//jobname JOB ....
// EXEC PGM=IEFBR14
//ALLOC DD UNIT=SYSDA,DISP=(NEW,CATLG),DSN=TRN.RI00LIBT,
// SPACE=(TRK,(55,,90)),DCB=(RECFM=FB,DSORG=PO,LRECL=80,
// BLKSIZE=3120),VOL=SER=volser
```

The Codelist Library

The codelist library is a partitioned dataset. The records are fixed-length 132 bytes.

The codelist library has the following characteristics:

Data set name:TRN.RI00SYSC
Record format:FB (fixed-length blocked)
Record length:132
Block size: 1584
Number of directory blocks: 12
Space allocated: 5 cylinders

The following job setup can be used to allocate the file:

```
//jobname JOB ....
// EXEC PGM=IEFBR14
//CODLST DD UNIT=SYSDA,DISP=(NEW,CATLG),DSN=TRN.RI00SYSC,
// SPACE=(CYL,(5,,12)),DCB=(RECFM=FB,DSORG=PO,LRECL=132,
// BLKSIZE=1584),VOL=SER=volser
```

The JCL-examples Library

The JCL-examples library is a partitioned dataset. The records are fixed-length 80 bytes.

The JCL-examples library has the following characteristics:

Data set name:TRN.RI00SYSE
Record format:FB (fixed-length blocked)
Record length:80
Block size: 3120
Number of directory blocks: 60
Space allocated: 4 cylinders

The following job setup can be used to allocate the file:

```
//jobname JOB ....
// EXEC PGM=IEFBR14
//TABLES DD UNIT=SYSDA,DISP=(NEW,CATLG),DSN=TRN.RI00SYSE,
// SPACE=(CYL,(4,,60)),DCB=(RECFM=FB,DSORG=PO,LRECL=80,
// BLKSIZE=3120),VOL=SER=volser
```


The Object-modules Library

The object-modules library is a partitioned dataset. The records are fixed-length 80 bytes.

The object-modules library has the following characteristics:

Data set name:TRN.RI00SYSO
Record format:FB (fixed-length blocked)
Record length:80
Block size: 3120
Number of directory blocks: 38
Space allocated: 25 cylinders

The following job setup can be used to allocate the file:

```
//jobname JOB ....  
// EXEC PGM=IEFBR14  
//TABLES DD UNIT=SYSDA,DISP=(NEW,CATLG),DSN=TRN.RI00SYSO,  
// SPACE=(CYL,(25,,38)),DCB=(RECFM=FB,DSORG=PO,LRECL=80,  
// BLKSIZE=3120),VOL=SER=volser
```

The Tables Library

The tables library is a partitioned dataset. The records are fixed-length 80 bytes.

The tables library has the following characteristics:

Data set name:TRN.RI00SYSU
Record format:FB (fixed-length blocked)
Record length:80
Block size: 3120
Number of directory blocks: 96
Space allocated: 7 cylinders

The following job setup can be used to allocate the file:

```
//jobname JOB ....  
// EXEC PGM=IEFBR14  
//TABLES DD UNIT=SYSDA,DISP=(NEW,CATLG),DSN=TRN.RI00SYSU,  
// SPACE=(CYL,(7,,96)),DCB=(RECFM=FB,DSORG=PO,LRECL=80,  
// BLKSIZE=3120),VOL=SER=volser
```

The TIS Users-list File

The TIS users-list file is a partitioned dataset. The records are fixed-length 132 bytes.

The TIS users-list file has the following characteristics:

Data set name:TRN.RI00USER
Record format:FB (fixed-length blocked)
Record length:132
Block size: 1320
Number of directory blocks: 10
Space allocated: 11 tracks

The following job setup can be used to allocate the file:

```
//jobname JOB ....  
// EXEC PGM=IEFBR14  
//ALLOC DD UNIT=SYSDA,DISP=(NEW,CATLG),DSN=TRN.RI00USER,  
// SPACE=(TRK,(11,,10)),DCB=(RECFM=FB,DSORG=PO,LRECL=132,  
// BLKSIZE=1320),VOL=SER=volser
```

The Usage Tracking File

The usage tracking file is a sequential dataset. The records are fixed-length 87 bytes.

The usage tracking file has the following characteristics:

Data set name:TRN.RI00USES
Record format:FB (fixed-length blocked)
Record length:87
Block size: 3828
Space allocated: 7 cylinders

The following job setup can be used to allocate the file:

```
//jobname JOB ....  
// EXEC PGM=IEFBR14  
//ALLOC DD UNIT=SYSDA,DISP=(NEW,CATLG),DSN=TRN.RI00USES,  
// SPACE=(CYL,(7,2)),DCB=(RECFM=FB,LRECL=87,  
// BLKSIZE=3828),VOL=SER=volser
```

The City Table

The city table is a key-sequential VSAM file. The records are fixed-length 52 bytes.

The city table has the following characteristics:

Data set name: TRN.RI09CITP
Key position: 1 (second byte of record)
Key length: 6
Maximum record length: 52
Average record length: 52
Shareoptions: 2-3
% Freespace (CA,CI): 10,10
Control interval size: 4096

Index space:3 tracks
Secondary index space: 1 track
Data space: As needed
Secondary data space:1 cylinder

The following job setup can be used to allocate the file:

```
//jobname JOB ....  
//EXEC PGM=IDCAMS  
//SYSPRINT DD SYSOUT=2  
//SYSIN DD *  
DEFINE CLUSTER (NAME(TRN.RI09CITP) -  
INDEXED KEYS(6 1) RECSZ(52 52) -  
VOL(DOT210) REUSE SHR(2) ) -  
DATA (NAME(TRN.RI09CITP.DATA) FSPC(10 10) CISZ(4096) -  
CYLINDERS(1 1) SPEED ) -  
INDEX (NAME(TRN.RI09CITP.INDEX) TRACKS(3 1) NOIMBED )
```

Approximately 13,695 records can be stored on each cylinder of prime disk space.

Prime space allocated = 1 cylinder = 13,695 record capacity.

Total space currently allocated = 1 cylinder + 4 tracks

Number of records stored as of April, 1992 = 899.

The Coincident File -----

The coincident file is a key-sequenced VSAM file. The records are fixed-length 67 bytes.

The coincident file has the following characteristics:

Data set name: TRN.RI09COFP
Key position: 1 (second byte of record)
Key length: 21
Maximum record length: 67
Average record length: 67
Shareoptions: 2-3
% Freespace (CA,CI): 10,10
Control interval size: 4096
Index space:3 tracks
Secondary index space: 1 track
Data space: As needed
Secondary data space:1 cylinder

The following job setup can be used to allocate the file:

```
//jobname JOB ....  
//EXEC PGM=IDCAMS  
//SYSPRINT DD SYSOUT=2  
//SYSIN DD *
```

```

DEFINE CLUSTER (NAME(TRN.RI09COFP) -
INDEXED KEYS(21 1) RECSZ(67 67) -
VOL(DOT210) REUSE SHR(2) ) -
DATA (NAME(TRN.RI09COFP.DATA) FSPC(10 10) CISZ(4096) -
CYLINDERS(1 1) SPEED ) -
INDEX (NAME(TRN.RI09COFP.INDEX) TRACKS(3 1) NOIMBED )

```

Approximately 10,600 records can be stored on each cylinder of prime disk space.

Prime space allocated = 1 cylinders = 10,600 record capacity.

Total space currently allocated = 1 cylinder + 4 tracks.

Number of records stored as of April, 1992 = 214.

The Logpoint File

The logpoint file is a key-sequenced VSAM file. The records are fixed-length 82 bytes.

The logpoint file has the following characteristics:

```

Data set name: TRN.RI09LPTP
Key position: 1 (second byte of record)
Keylength: 21
Maximum record length: 82
Average record length: 82
Shareoptions: 2,3
% Freespace (CA,CI): 10,10
Control interval size: 4096
Index space:3 tracks
Secondary index space: 1 track
Data space: As needed
Secondary data space:1 cylinder

```

The following job setup can be used to allocate the file:

```

//jobname JOB ....
//EXEC PGM=IDCAMS,REGION=384K
//SYSPRINT DD SYSOUT=*
//SYSIN DD *
    DEFINE CLUSTER (NAME(TRN.RI09LPTP) -
INDEXED KEYS(21 1) RECSZ(82 82) -
VOL(volser) REUSE SHR(2) ) -
DATA (NAME(TRN.RI09LPTP.DATA) FSPC(10 10) CISZ(4096) -
CYLINDERS(data 1) SPEED ) -
INDEX (NAME(TRN.RI09LPTP.INDEX) TRACKS(3 1) NOIMBED )

```

Approximately 8,684 records can be stored on each cylinder of prime disk space.

Prime space allocated = 50 cylinders = 434,200 record capacity.

Total space currently allocated = 50 cylinders + 4 tracks.

Number of records stored as of April, 1992 = 200,654

The Roadlog File

The roadlog file is a key-sequenced VSAM file. The records are fixed-length 240 bytes.

The roadlog file has the following characteristics:

Data set name: TRN.RI09RLGP
Key position: 1 (second byte of record)
Keylength: 21
Maximum record length: 247
Average record length: 247
Shareoptions: 2,3
% Freespace (CA,CI): 10,10
Control interval size: 4096
Index space:10 tracks
Secondary index space: 1 track
Data space: As needed
Secondary data space:1 cylinder

The following job setup can be used to allocate the file:

```
//jobname JOB ....  
//EXEC PGM=IDCAMS,REGION=384K  
//SYSPRINT DD SYSOUT=*  
//SYSIN DD *  
    DEFINE CLUSTER (NAME(TRN.RI09RLGP) -  
INDEXED KEYS(21 1) RECSZ(247 247) -  
VOL(volser) REUSE SHR(2) ) -  
DATA (NAME(TRN.RI09RLGP.DATA) FSPC(10 10) CISZ(4096) -  
CYLINDERS(data 1) SPEED ) -  
INDEX (NAME(TRN.RI09RLGP.INDEX) TRACKS(10 1) NOIMBED )
```

Approximately 2,883 records can be stored on each cylinder of prime disk space.

Prime space allocated = 166 cylinders = 456,578 record capacity.

Total space currently allocated = 166 cylinders + index = 11 tracks.

Number of records stored as of October 23, 1992 = 317,325.

The Street Name Cross-reference File

The street name cross-reference file is a key-sequential VSAM file. The records are fixed-length 63 bytes.

The street name cross-reference file has the following characteristics:

Data set name: TRN.RI09STRP
Key position: 1 (second byte of record)
Keylength: 21
Maximum record length: 63
Average record length: 63
Shareoptions: 2,3
% Freespace (CA,CI): 0,0
Control interval size: 4096
Index space:3 tracks
Secondary index space: 1 track
Data space: As needed
Secondary data space:1 cylinder

The following job setup can be used to allocate the file:

```
//jobname JOB ....  
//EXEC PGM=IDCAMS  
//SYSPRINT DD SYSOUT=2  
//SYSIN DD *  
DEFINE CLUSTER (NAME(TRN.RI09STRP) -  
INDEXED KEYS(21 1) RECSZ(63 63) -  
VOL(DOT210) REUSE SHR(2) ) -  
DATA (NAME(TRN.RI09STRP.DATA) FSPC(10 10) CISZ(4096) -  
CYLINDERS(13 1) SPEED ) -  
INDEX (NAME(TRN.RI09STRP.INDEX) TRACKS(3 1) NOIMBED )
```

Approximately 11,300 records can be stored on each cylinder of prime disk space.

Prime space allocated = 13 cylinders = 146,900 record capacity.

Total space currently allocated = 13 + cylinders + 4 tracks.

Number of records stored as April, 1992 = 65,163.

The Township File

The township file is a key-sequential VSAM file. The records are fixed-length 31 bytes.

The township file has the following characteristics:

Data set name: TRN.RI09TWNP
Key position: 1 (second byte of record)
Key length: 5
Maximum record length: 31
Average record length: 31
Shareoptions: 2-3
% Freespace (CA,CI): 10,10
Control interval size: 4096
Index space:3 tracks

Secondary index space: 1 track
Data space: As needed
Secondary data space:1 cylinder

The following job setup can be used to allocate the file:

```
//jobname JOB ....  
//EXEC PGM=IDCAMS  
//SYSPRINT DD SYSOUT=2  
//SYSIN DD *  
DEFINE CLUSTER (NAME(TRN.RI09TWNP) -  
INDEXED KEYS(5 1) RECSZ(31 31) -  
VOL(DOT210) REUSE SHR(2) ) -  
DATA (NAME(TRN.RI09TWNP.DATA) FSPC(10 10) CISZ(4096) -  
CYLINDERS(1 1) SPEED ) -  
INDEX (NAME(TRN.RI09TWNP.INDEX) TRACKS(3 1) NOIMBED )
```

Approximately 22,970 records can be stored on each cylinder of prime disk space.

Prime space allocated = 1 cylinder = 22,970 record capacity.

Total space currently allocated = 1 cylinder + 4 tracks.

Number of records stored as April, 1992 = 2,231.

The Construction District Cross-reference File

The construction district cross-reference file is a key-sequential VSAM file. The records are fixed-length 50 bytes.

The construction district cross-reference file has the following characteristics:

Data set name: TRN.RI09XCDP
Key position: 1 (second byte of record)
Keylength: 22
Maximum record length: 50
Average record length: 50
Shareoptions: 2,3
% Freespace (CA,CI): 0,0
Control interval size: 4096
Index space:3 tracks
Secondary index space: 1 track
Data space: As needed
Secondary data space:1 cylinder

The following job setup can be used to allocate the file:

```
//jobname JOB ....  
//EXEC PGM=IDCAMS  
//SYSPRINT DD SYSOUT=2  
//SYSIN DD *
```

```

DEFINE CLUSTER (NAME(TRN.RI09XCDP) -
INDEXED KEYS(22 1) RECSZ(50 50) -
VOL(DOT210) REUSE SHR(2) ) -
DATA (NAME(TRN.RI09XCDP.DATA) FSPC(10 10) CISZ(4096) -
CYLINDERS(7 1) SPEED ) -
INDEX (NAME(TRN.RI09XCDP.INDEX) TRACKS(3 1) NOIMBED )

```

Approximately 14,242 records can be stored on each cylinder of prime disk space.

Prime space allocated = 7 cylinders = 99,694 record capacity.

Total space currently allocated = 7 cylinders + 4 tracks.

Number of records stored as April, 1992 = 58,694.

The City Cross-reference File -----

The city cross-reference file is a key-sequential VSAM file. The records are fixed-length 47 bytes.

The city cross-reference file has the following characteristics:

```

Data set name: TRN.RI09XCIP
Key position:  1 (second byte of record)
Keylength:    25
Maximum record length:  47
Average record length:  47
Shareoptions:  2,3
% Freespace (CA,CI):  0,0
Control interval size:  4096
Index space:3 tracks
Secondary index space:  1 track
Data space: As needed
Secondary data space:1 cylinder

```

The following job setup can be used to allocate the file:

```

//jobname JOB ....
//EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=2
//SYSIN DD *
DEFINE CLUSTER (NAME(TRN.RI09XCIP) -
INDEXED KEYS(25 1) RECSZ(47 47) -
VOL(DOT210) REUSE SHR(2) ) -
DATA (NAME(TRN.RI09XCIP.DATA) FSPC(10 10) CISZ(4096) -
CYLINDERS(1 1) SPEED ) -
INDEX (NAME(TRN.RI09XCIP.INDEX) TRACKS(3 1) NOIMBED )

```

Approximately 15,150 records can be stored on each cylinder of prime disk space.

Prime space allocated = 1 cylinder = 15,150 record capacity.

Total space currently allocated = 1 cylinder + 4 tracks.

Number of records stored as April, 1992 = 6,577.

The County Cross-reference File

The county cross-reference file is a key-sequential VSAM file. The records are fixed-length 49 bytes.

The county cross-reference file has the following characteristics:

Data set name: TRN.RI09XCNP
Key position: 1 (second byte of record)
Keylength: 23
Maximum record length: 49
Average record length: 49
Shareoptions: 2,3
% Freespace (CA,CI): 0,0
Control interval size: 4096
Index space:3 tracks
Secondary index space: 1 track
Data space: As needed
Secondary data space:1 cylinder

The following job setup can be used to allocate the file:

```
//jobname JOB ....  
//EXEC PGM=IDCAMS  
//SYSPRINT DD SYSOUT=2  
//SYSIN DD *  
DEFINE CLUSTER (NAME(TRN.RI09XCNP) -  
INDEXED KEYS(23 1) RECSZ(49 49) -  
VOL(DOT210) REUSE SHR(2) ) -  
DATA (NAME(TRN.RI09XCNP.DATA) FSPC(10 10) CISZ(4096) -  
CYLINDERS(7 1) SPEED ) -  
INDEX (NAME(TRN.RI09XCNP.INDEX) TRACKS(3 1) NOIMBED )
```

Approximately 14,533 records can be stored on each cylinder of prime disk space.

Prime space allocated = 7 cylinders = 101,731 record capacity.

Total space currently allocated = 7 + 4 tracks.

Number of records stored as April, 1992 = 58,662.

The Maintenance Area Cross-reference File

The maintenance area cross-reference file is an key-sequential VSAM file. The records are fixed-length 34 bytes.

The maintenance area cross-reference file has the following characteristics:

Data set name: TRN.RI09XMNP
Key position: 1 (second byte of record)
Keylength: 23
Maximum record length: 34
Average record length: 34
Shareoptions: 2,3
% Freespace (CA,CI): 0,0
Control interval size: 4096
Index space:3 tracks
Secondary index space: 1 track
Data space: As needed
Secondary data space:1 cylinder

The following job setup can be used to allocate the file:

```
//jobname JOB .....  
//EXEC PGM=IDCAMS  
//SYSPRINT DD SYSOUT=2  
//SYSIN DD *  
DEFINE CLUSTER (NAME(TRN.RI09XMNP) -  
INDEXED KEYS(23 1) RECSZ(34 34) -  
VOL(DOT210) REUSE SHR(2) ) -  
DATA (NAME(TRN.RI09XMNP.DATA) FSPC(10 10) CISZ(4096) -  
CYLINDERS(1 1) SPEED ) -  
INDEX (NAME(TRN.RI09XMNP.INDEX) TRACKS(3 1) NOIMBED )
```

Approximately 20,945 records can be stored on each cylinder of prime disk space.

Prime space allocated = 1 cylinder = 20,945 record capacity.

Total space currently allocated = 1 cylinder + 4 tracks.

Number of records stored as June, 1986 = 409.

The Patrol Station Cross-reference File -----

The patrol station cross-reference file is a key-sequential VSAM file.
The records are fixed-length 42 bytes.

The patrol station cross-reference file has the following characteristics:

Data set name: TRN.RI09XPTP
Key position: 1 (second byte of record)
Keylength: 25
Maximum record length: 42
Average record length: 42
Shareoptions: 2,3
% Freespace (CA,CI): 0,0

Control interval size: 4096
Index space:3 tracks
Secondary index space: 1 track
Data space: As needed
Secondary data space:1 cylinder

The following job setup can be used to allocate the file:

```
//jobname JOB ....  
//EXEC PGM=IDCAMS  
//SYSPRINT DD SYSOUT=2  
//SYSIN DD *  
DEFINE CLUSTER (NAME(TRN.RI09XPTP) -  
INDEXED KEYS(25 1) RECSZ(42 42) -  
VOL(DOT210) REUSE SHR(2) ) -  
DATA (NAME(TRN.RI09XPTP.DATA) FSPC(10 10) CISZ(4096) -  
CYLINDERS(1 1) SPEED ) -  
INDEX (NAME(TRN.RI09XPTP.INDEX) TRACKS(3 1) NOIMBED )
```

Approximately 16,955 records can be stored on each cylinder of prime disk space.

Prime space allocated = 1 cylinder = 16,955 record capacity.

Total space currently allocated = 1 cylinder + 4 tracks.

Number of records stored as of April, 1992 = 2,993.

The True Mileage File -----

The true mileage file is a key-sequenced VSAM file. The records are fixed-length 28 bytes.

The true mileage file has the following characteristics:

Data set name: TRN.RI13TRMP
Key position: 1 (second byte of record)
Keylength: 14
Maximum record length: 28
Average record length: 28
Shareoptions: 2,3
% Freespace (CA,CI): 10,10
Control interval size: 4096
Index space:1 track
Secondary index space: 1 track
Data space: As needed
Secondary data space:1 track

The following job setup can be used to allocate the file:

```
//jobname JOB ....  
//EXEC PGM=IDCAMS,REGION=384K  
//SYSPRINT DD SYSOUT=*
```

```
//SYSIN DD *
  DEFINE CLUSTER (NAME(TRN.RI13TRMP) -
INDEXED KEYS(14 1) RECSZ(28 28) -
VOL(volser) FSPC(10 10) REUSE SHR(2) ) -
DATA (NAME(TRN.RI13TRMP.DATA) CISZ(4096) -
TRACKS(data 1) SPEED ) -
INDEX (NAME(TRN.RI13TRMP.INDEX) TRACKS(1 1) NOIMBED )
```

Approximately 1,695 records can be stored on each track of prime disk space.

Prime space allocated = 11 tracks = 16,645 record capacity.

Total space currently allocated = 13 tracks.

Number of records stored as of April, 1992 = 12,587.

The Intersection File -----

The intersection file is a key-sequential VSAM file. The records are variable-length with lengths ranging from 228 to 1204 bytes.

The intersection file has the following characteristics:

```
Data set name: TRN.RI15INTP
Key position:  1 (second byte of record)
Key length: 24
Maximum record length: 1204
Average record length: 500
Shareoptions:  2-3
% Freespace (CA,CI): 10,10
Control interval size: 4096
Index space:3 tracks
Secondary index space: 1 track
Data space: As needed
Secondary data space:2 cylinders
```

The following job setup can be used to allocate the file:

```
//jobname JOB ....
//EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=2
//SYSIN DD *
  DEFINE CLUSTER (NAME(TRN.RI15INTP) -
INDEXED KEYS(24 5) RECSZ(500 1204) -
VOL(DOT210) REUSE SHR(2) ) -
DATA (NAME(TRN.RI15INTP.DATA) FSPC(10 10) CISZ(4096) -
CYLINDERS(10 2) SPEED ) -
INDEX (NAME(TRN.RI15INTP.INDEX) TRACKS(3 1) NOIMBED )
```

Roughly 1742 records can be stored on each cylinder of prime disk space (the exact amount depends upon the lengths of the records).

Prime space allocated = 10 cylinders = 17,420 record capacity.

Total space currently allocated = 10 cylinders + 4 tracks

Number of records stored as April, 1992 = 13,588.

The Sections File

The intersection file is a key-sequential VSAM file. The records are fixed-length 89 bytes.

The sections file has the following characteristics:

Data set name: TRN.RI15SECP
Key position: 1 (second byte of record)
Key length: 21
Maximum record length: 89
Average record length: 89
Shareoptions: 2-3
% Freespace (CA,CI): 10,10
Control interval size: 4096
Index space: 3 tracks
Secondary index space: 1 track
Data space: As needed
Secondary data space: 1 cylinder

The following job setup can be used to allocate the file:

```
//jobname JOB ....  
//EXEC PGM=IDCAMS  
//SYSPRINT DD SYSOUT=2  
//SYSIN DD *  
DEFINE CLUSTER (NAME(TRN.RI15SECP) -  
INDEXED KEYS(21 1) RECSZ(89 89) -  
VOL(DOT210) REUSE SHR(2) ) -  
DATA (NAME(TRN.RI15SECP.DATA) FSPC(10 10) CISZ(4096) -  
CYLINDERS(1 1) SPEED ) -  
INDEX (NAME(TRN.RI15SECP.INDEX) TRACKS(3 1) NOIMBED )
```

Approximately 8000 records can be stored on each cylinder of prime disk space.

Prime space allocated = 1 cylinders = 8,000 record capacity.

Total space currently allocated = 1 cylinders + 4 tracks

Number of records stored as April, 1992 = 5,098.

The Intersection Cross-reference File

The intersection cross-reference file is a key-sequential VSAM file. The records are fixed-length 60 bytes.

The intersection cross-reference file has the following characteristics:

Data set name: TRN.RI15XINP
Key position: 1 (second byte of record)
Keylength: 44
Maximum record length: 60
Average record length: 60
Shareoptions: 2,3
% Freespace (CA,CI): 0,0
Control interval size: 4096
Index space:3 tracks
Secondary index space: 1 track
Data space: As needed
Secondary data space:3 cylinders

The following job setup can be used to allocate the file:

```
//jobname JOB ....  
//EXEC PGM=IDCAMS  
//SYSPRINT DD SYSOUT=2  
//SYSIN DD *  
DEFINE CLUSTER (NAME(TRN.RI15XINP) -  
INDEXED KEYS(44 1) RECSZ(60 60) -  
VOL(DOT210) REUSE SHR(2) ) -  
DATA (NAME(TRN.RI15XINP.DATA) FSPC(10 10) CISZ(4096) -  
CYLINDERS(5 3) SPEED ) -  
INDEX (NAME(TRN.RI15XINP.INDEX) TRACKS(3 1) NOIMBED )
```

Approximately 11,869 records can be stored on each cylinder of prime disk space.

Prime space allocated = 5 cylinders = 59,345 record capacity.

Total space currently allocated = 5 cylinders + 4 tracks.

Number of records stored as of April, 1992 = 23,050.

The Accident File -----

The accident file is a key-sequenced VSAM file. The records are variable-length with lengths ranging from 228 to 10,986 bytes.

The accident file has the following characteristics:

Data set name: TRN.RI16ACDP
Key position: 4 (fifth byte of record)
Keylength: 30
Maximum record length: 10,986
Average record length: 325
Shareoptions: 2,3

```
% Freespace (CA,CI): 0,0
Control interval size: 8192
Index space:1 track
Secondary index space: 1 track
Data space: As needed
Secondary data space:5 cylinders
```

The following job setup can be used to allocate the file:

```
//jobname JOB ....
//EXEC PGM=IDCAMS,REGION=384K
//SYSPRINT DD SYSOUT=*
//SYSIN DD *
    DEFINE CLUSTER (NAME(TRN.RI16ACDP) -
INDEXED KEYS(30 4) RECSZ(325 10986) -
VOL(volser) REUSE SHR(2) ) -
DATA (NAME(TRN.RI16ACDP.DATA) FSPC(0 0) CISZ(8192) -
CYLINDERS(data 4) SPEED ) -
INDEX (NAME(TRN.RI16ACDP.INDEX) TRACKS(1 1) NOIMBED )
```

Approximately 2191 records can be stored on each cylinder of prime disk space.

Prime space allocated = 350 cylinders = 766,850 record capacity.

Total space currently allocated = 354 cylinders + 1 track.

Number of records stored as of April, 1992 = 605,791

The Bridge File -----

The bridge file is a key-sequenced VSAM file. The records are fixed-length 648 bytes.

The bridge file has the following characteristics:

```
Data set name: TRN.RI20BDGP
Key position: 3 (fourth byte of record)
Keylength: 7
Maximum record length: 648
Average record length: 648
Shareoptions: 2,3
% Freespace (CA,CI): 10,10
Control interval size: 4096
Index space:3
Secondary index space: 1 track
Data space: as needed
Secondary data space:1 cylinder
```

The following job setup can be used to allocate the file:

```
//jobname JOB ....
//EXEC PGM=IDCAMS,REGION=384K
```

```
//SYSPRINT DD SYSOUT=*
//SYSIN DD *
  DEFINE CLUSTER (NAME(TRN.RI20BDGP) -
INDEXED KEYS(7 3) RECSZ(648 648) -
VOL(volser) REUSE SHR(2) ) -
DATA (NAME(TRN.RI20BDGP.DATA) FSPC(10 10) CISZ(4096) -
CYLINDERS(DATA 1) SPEED ) -
INDEX (NAME(TRN.RI20BDGP.INDEX) TRACKS(3 1) NOIMBED )
```

Approximately 1098 records can be stored on each cylinder of prime disk space.

Prime space allocated = 34 cylinders = 37,332 record capacity.

Total space currently allocated = 35 cylinders + 3 tracks.

Number of records stored as of April, 1992 = 21,466.

The Bridge Cross Reference File

The bridge cross reference file is a key-sequential VSAM file. The records are fixed-length 38 bytes.

The bridge cross reference file has the following characteristics:

```
Data set name: TRN.RI20XBRP
Key position: 1 (second byte of record)
Keylength: 32
Maximum record length: 38
Average record length: 38
Shareoptions: 2,3
% Freespace (CA,CI): 0,0
Control interval size: 4096
Index space:3 tracks
Secondary index space: 1 track
Data space: As needed
Secondary data space:3 cylinder
```

The following job setup can be used to allocate the file:

```
//jobname JOB ....
//EXEC PGM=IDCAMS
//SYSPRINT DD SYSOUT=2
//SYSIN DD *
  DEFINE CLUSTER (NAME(TRN.RI20XBRP) -
INDEXED KEYS(32 1) RECSZ(38 38) -
VOL(DOT210) REUSE SHR(2) ) -
DATA (NAME(TRN.RI20XBRP.DATA) FSPC(10 10) CISZ(4096) -
CYLINDERS(6 3) SPEED ) -
INDEX (NAME(TRN.RI20XBRP.INDEX) TRACKS(3 1) NOIMBED )
```

Approximately 18,740 records can be stored on each cylinder of prime disk space.

Prime space allocated = 6 cylinders = 112,440 record capacity.

Total space currently allocated = 7 cylinders + 3 tracks.

Number of records stored as April, 1992 = 25,679.

The Rail Grade Crossing File

The rail grade crossing file is a key-sequential VSAM file. The records are fixed-length 265 bytes.

The rail grade crossing file has the following characteristics:

Data set name: TRN.RI22RGCP
Key position: 1 (second byte of record)
Keylength: 8
Maximum record length: 265
Average record length: 265
Shareoptions: 2,3
% Freespace (CA,CI): 0,0
Control interval size: 4096
Index space:3 tracks
Secondary index space: 1 track
Data space: As needed
Secondary data space:2 cylinders

The following job setup can be used to allocate the file:

```
//jobname JOB ....  
//EXEC PGM=IDCAMS  
//SYSPRINT DD SYSOUT=2  
//SYSIN DD *  
DEFINE CLUSTER (NAME(TRN.RI22RGCP) -  
INDEXED KEYS(8 1) RECSZ(265 265) -  
VOL(DOT210) REUSE SHR(2) ) -  
DATA (NAME(TRN.RI22RGCP.DATA) FSPC(10 10) CISZ(4096) -  
CYLINDERS(7 2) SPEED ) -  
INDEX (NAME(TRN.RI22RGCP.INDEX) TRACKS(3 1) NOIMBED )
```

Approximately 2,687 records can be stored on each cylinder of prime disk space.

Prime space allocated = 7 cylinder = 18,809 record capacity.

Total space currently allocated = 8 cylinders + 3 tracks.

Number of records stored as of April, 1992 = 6,918.

The Rail Grade Crossing Cross Reference File

The rail grade crossing cross reference file is a key-sequential VSAM file. The records are fixed-length 42 bytes.

The rail grade crossing cross reference file has the following characteristics:

Data set name: TRN.RI22XRGP
Key position: 1 (second byte of record)
Keylength: 21
Maximum record length: 42
Average record length: 42
Shareoptions: 2,3
% Freespace (CA,CI): 0,0
Control interval size: 4096
Index space:3 tracks
Secondary index space: 1 track
Data space: As needed
Secondary data space:1 cylinder

The following job setup can be used to allocate the file:

```
//jobname JOB ....  
//EXEC PGM=IDCAMS  
//SYSPRINT DD SYSOUT=2  
//SYSIN DD *  
DEFINE CLUSTER (NAME(TRN.RI22XRGP) -  
INDEXED KEYS(21 1) RECSZ(42 42) -  
VOL(DOT210) REUSE SHR(2) ) -  
DATA (NAME(TRN.RI22XRGP.DATA) FSPC(10 10) CISZ(4096) -  
CYLINDERS(1 1) SPEED ) -  
INDEX (NAME(TRN.RI22XRGP.INDEX) TRACKS(3 1) NOIMBED )
```

Approximately 16,955 records can be stored on each cylinder of prime disk space.

Prime space allocated = 1 cylinder = 16,955 record capacity.

Total space currently allocated = 2 + 3 tracks.

Number of records stored as of April, 1992 = 6,711.

The Condition Rating File -----

The condition rating file is an key-sequenced VSAM file. The records are variable-length from 182 to 2155 bytes.

The condition rating file has the following characteristics:

Data set name: TRN.RI24PMSP
Key position: 0 (first byte of record)
Keylength: 22
Maximum record length: 2155
Average record length: 760

Shareoptions: 2,3
% Freespace (CA,CI): 10,10
Control interval size: 4096
Index space:1 track
Secondary index space: 1 track
Data space: As needed
Secondary data space:1 cylinder

The following job setup can be used to allocate the file:

```
//jobname JOB ....  
//EXEC PGM=IDCAMS,REGION=384K  
//SYSPRINT DD SYSOUT=2  
//SYSIN DD *  
DEFINE CLUSTER (NAME(TRN.RI24PMSP) -  
INDEXED KEYS(22 0) RECSZ(760 2155) -  
VOL(PRV23F) FSPC(10 10) REUSE SHR(2) ) -  
DATA (NAME(TRN.RI24PMSP.DATA) CISZ(4096) -  
CYLINDERS(27 1) SPEED ) -  
INDEX (NAME(TRN.RI24PMSP.INDEX) TRACKS(1 1) IMBED )
```

Approximately 937 records can be stored on each cylinder of prime disk space.

Prime space allocated = 31 cylinder = 29,047 record capacity.

Total space currently allocated = 36 cylinders + 2 tracks.

Number of records stored as of April, 1992 = 15,530

The Control Section Notes File

The control section notes file is an key-sequenced VSAM file. The records are fixed-length, 47 bytes.

The control section notes file has the following characteristics:

Data set name: TRN.RI26CSNP
Key position: 1 (second byte of record)
Keylength: 6
Maximum record length: 47
Average record length: 47
Shareoptions: 2,3
% Freespace (CA,CI): 10,10
Control interval size: 4096
Index space:3 track
Secondary index space: 1 track
Data space: As needed
Secondary data space:1 cylinder

The following job setup can be used to allocate the file:

```
//jobname JOB ....
//EXEC PGM=IDCAMS,REGION=384K
//SYSPRINT DD SYSOUT=2
//SYSIN DD *
DEFINE CLUSTER (NAME(TRN.RI26SCNP) -
INDEXED KEYS(6 1) RECSZ(47 47) -
VOL(DOT210) FSPC(10 10) REUSE SHR(2) ) -
DATA (NAME(TRN.RI26CSNP.DATA) CISZ(4096) -
CYLINDERS(data 1) SPEED ) -
INDEX (NAME(TRN.RI26CSNP.INDEX) TRACKS(3 1) IMBED )
```

Approximately 15,151 records can be stored on each cylinder of prime disk space.

Prime space allocated = 1 cylinder = 15,151 record capacity.

Total space currently allocated = 2 cylinders + 3 tracks.

Number of records stored as of April, 1992 = 1510

The Control Section Cross Reference File

The control section cross reference file is sequential file. The records are fixed-length, 87 bytes.

The control section cross reference file has the following characteristics:

Data set name:TRN.RI26XCSP
Record format:FB (fixed-length blocked)
Record length:87
Block size: 3132
Space allocated: 3 tracks
Secondary data space: 1 track

The following job setup can be used to allocate the file:

```
//jobname JOB ....
// EXEC PGM=IEFBR14
//ALLOC DD UNIT=SYSDA,DISP=(NEW,CATLG),DSN=TRN.RI26XCSP,
// SPACE=(TRK,(3,1)),DCB=(RECFM=FB,LRECL=87,
// BLKSIZE=3132),VOL=SER=volser
```

Approximately 545 records can be stored on each track of prime disk space.

Prime space allocated = 3 tracks = 1,635 record capacity.

Total space currently allocated = 4 tracks.

Number of records stored as of April, 1992 = 1,197

The Highway Performance Monitoring System (HPMS) File

The HPMS is a key-sequential VSAM file. The records are fixed-length 240 bytes.

The HPMS file has the following characteristics:

Data set name: TRN.RI29HPMS
Key position: 1 (second byte of record)
Keylength: 21
Maximum record length: 240
Average record length: 240
Shareoptions: 2,3
% Freespace (CA,CI): 0,0
Control interval size: 4096
Index space: 9 tracks
Secondary index space: 1 track
Data space: As needed
Secondary data space: 1 cylinder

The following job setup can be used to allocate the file:

```
//jobname JOB ....  
//EXEC PGM=IDCAMS  
//SYSPRINT DD SYSOUT=2  
//SYSIN DD *  
DEFINE CLUSTER (NAME(TRN.RI29HPMP) -  
INDEXED KEYS(211) RECSZ(240 240) -  
VOL(volser) REUSE SHR(2) ) -  
DATA (NAME(TRN.RI29HPMP.DATA) FSPC(10 10) CISZ(4096) -  
CYLINDERS(data 1) SPEED ) -  
INDEX (NAME(TRN.RI29HPMP.INDEX) TRACKS(9 1) NOIMBED )
```

Approximately 2,967 records can be stored on each cylinder of prime disk space.

Prime space allocated = 145 cylinders = 430,215 record capacity.

Total space currently allocated = 154 cylinders + 9 tracks.

Number of records stored as of April, 1992 = 306,831

The Rail True Mileage File

The rail true mileage file is a key-sequential VSAM file. The records are fixed-length 20 bytes.

The rail true mileage file has the following characteristics:

Data set name: TRN.RI31RTMP

Key position: 1 (second byte of record)
Keylength: 7
Maximum record length: 20
Average record length: 20
Shareoptions: 2,3
% Freespace (CA,CI): 0,0
Control interval size: 4096
Index space:3 tracks
Secondary index space: 1 track
Data space: As needed
Secondary data space:1 cylinder

The following job setup can be used to allocate the file:

```
//jobname JOB ....  
//EXEC PGM=IDCAMS  
//SYSPRINT DD SYSOUT=2  
//SYSIN DD *  
DEFINE CLUSTER (NAME(TRN.RI31RTMP) -  
INDEXED KEYS(7 1) RECSZ(20 20) -  
VOL(DOT210) REUSE SHR(2) ) -  
DATA (NAME(TRN.RI31RTMP.DATA) FSPC(10 10) CISZ(4096) -  
CYLINDERS(1 1) SPEED ) -  
INDEX (NAME(TRN.RI31RTMP.INDEX) TRACKS(3 1) NOIMBED )
```

Approximately 35,607 records can be stored on each cylinder of prime disk space.

Prime space allocated = 1 cylinder = 35,607 record capacity.

Total space currently allocated = 1 cylinder + 4 tracks.

Number of records stored as of April, 1992 = 5,448.

The Station File -----

The station file is a key-sequential VSAM file. The records are fixed-length 60 bytes.

The station file has the following characteristics:

Data set name: TRN.RI32STAP
Key position: 1 (second byte of record)
Keylength: 7
Maximum record length: 60
Average record length: 60
Shareoptions: 2,3
% Freespace (CA,CI): 0,0
Control interval size: 4096
Index space:3 tracks
Secondary index space: 1 track
Data space: As needed
Secondary data space:1 cylinder

The following job setup can be used to allocate the file:

```
//DT00C7BA JOB (702060,21),'S SORENSEN RM/820',CLASS=C,NOTIFY=DT00C7B,  
// MSGCLASS=2  
/*JOBPARM LINES=150  
//EXEC PGM=IDCAMS  
//SYSPRINT DD SYSOUT=2  
//SYSIN DD *  
DEFINE CLUSTER (NAME(TRN.RI32STAP) -  
INDEXED KEYS(7 1) RECSZ(60 60) -  
VOL(DOT210) REUSE SHR(2) ) -  
DATA (NAME(TRN.RI32STAP.DATA) FSPC(10 10) CISZ(4096) -  
CYLINDERS(1 1) SPEED ) -  
INDEX (NAME(TRN.RI32STAP.INDEX) TRACKS(3 1) NOIMBED )
```

Approximately 11,869 records can be stored on each cylinder of prime disk space.

Prime space allocated = 1 cylinder = 11,869 record capacity.

Total space currently allocated = 1 cylinder + 4 tracks.

Number of records stored as of April, 1992 = 755.

The Railpoint File

The railpoint file is a key-sequential VSAM file. The records are fixed-length 81 bytes.

The railpoint file has the following characteristics:

```
Data set name: TRN.RI34RPTP  
Key position: 1 (second byte of record)  
Keylength: 12  
Maximum record length: 81  
Average record length: 81  
Shareoptions: 2,3  
% Freespace (CA,CI): 0,0  
Control interval size: 4096  
Index space:3 tracks  
Secondary index space: 1 track  
Data space: As needed  
Secondary data space:1 cylinder
```

The following job setup can be used to allocate the file:

```
//jobname JOB ....  
//EXEC PGM=IDCAMS  
//SYSPRINT DD SYSOUT=2  
//SYSIN DD *  
DEFINE CLUSTER (NAME(TRN.RI34RPTP) -  
INDEXED KEYS(12 1) RECSZ(81 81) -
```

```
VOL(DOT210) REUSE SHR(2) ) -  
DATA (NAME(TRN.RI34RPTP.DATA) FSPC(10 10) CISZ(4096) -  
CYLINDERS(3 1) SPEED ) -  
INDEX (NAME(TRN.RI34RPTP.INDEX) TRACKS(3 1) NOIMBED )
```

8792 records can be stored on each cylinder of prime disk space.

Prime space allocated = 3 cylinders = 26,376 record capacity.

Total space currently allocated = 3 cylinders + 4 tracks.

Number of records stored as April, 1992 = 9,593.

The Railway File -----

The railway file is a key-sequential VSAM file. The records are fixed-length 170 bytes.

The railway file has the following characteristics:

```
Data set name: TRN.RI36RWYP  
Key position:  1 (second byte of record)  
Keylength:    12  
Maximum record length: 170  
Average record length: 170  
Shareoptions:  2,3  
% Freespace (CA,CI): 0,0  
Control interval size: 4096  
Index space:3 tracks  
Secondary index space: 1 track  
Data space: As needed  
Secondary data space:1 cylinder
```

The following job setup can be used to allocate the file:

```
//jobname JOB ....  
//EXEC PGM=IDCAMS  
//SYSPRINT DD SYSOUT=2  
//SYSIN DD *  
DEFINE CLUSTER (NAME(TRN.RI36RWYP) -  
INDEXED KEYS(12 1) RECSZ(170 170) -  
VOL(DOT210) REUSE SHR(2) ) -  
DATA (NAME(TRN.RI36RWYP.DATA) FSPC(10 10) CISZ(4096) -  
CYLINDERS(3 1) SPEED ) -  
INDEX (NAME(TRN.RI36RWYP.INDEX) TRACKS(3 1) NOIMBED )
```

Approximately 4,190 records can be stored on each cylinder of prime disk space.

Prime space allocated = 3 cylinders = 12,570 record capacity.

Total space currently allocated = 3 cylinders + 4 tracks.

Number of records stored as of April, 1992 = 2,784.

The Roadway History File

The roadway history file is a key-sequenced VSAM file. The records are variable-length from 95 to 1145 bytes.

The roadway history file has the following characteristics:

Data set name: TRN.RI41RDHP
Key position: 0 (first byte of record)
Keylength: 38
Maximum record length: 1145
Average record length: 170
Shareoptions: 2,3
% Freespace (CA,CI): 20,20
Control interval size: 4096
Index space:1 track
Secondary index space: 1 track
Data space: As needed
Secondary data space:1 cylinder

The following job setup can be used to allocate the file:

```
//jobname JOB ....  
// EXEC PGM=IDCAMS  
//SYSPRINT DD SYSOUT=2  
//SYSIN DD *  
DEFINE CLUSTER (NAME(TRN.RI41RDHP) -  
INDEXED KEYS(38 0) RECSZ(170 1145) -  
VOL(PRV18B) FSPC(20 20) NOREUSE SHR(2) ) -  
DATA (NAME(TRN.RI41RDHP.DATA) CISZ(4096) -  
CYLINDERS(12 1) SPEED ) -  
INDEX (NAME(TRN.RI41RDHP.INDEX) TRACKS(1 1) IMBED )
```

Approximately 4189 records can be stored on each cylinder of prime disk space.

Prime space allocated = 12 cylinders = 50,268 record capacity.

Total space currently allocated = 12 cylinders + 2 tracks.

Number of records stored as of April, 1992 = 33,997

The Roadway History Alternate-Index File

The roadway history alternate index is a key-sequenced VSAM file with variable-length records.

The roadway history alternate index has the following characteristics:

Data set name: TRN.RI41RDHP.AI01

Key position: 32 (33rd byte of record)
(in main file)
Key position:5 (6th byte of record)
(in alt. index)
Keylength: 6
Maximum record length: 3373
Average record length: 104
Shareoptions: 2,3
% Freespace (CA,CI): 20,20
Control interval size: 4096
Index space:1 track
Secondary index space: 1 track
Data space: As needed
Secondary data space:1 cylinder

The following job setup can be used to allocate the file:

```
//jobname JOB ....  
//INXALLOC EXEC PGM=IDCAMS  
//SYSPRINT DD SYSOUT=2  
//SYSIN DD *  
DEFINE ALTERNATEINDEX -  
  (NAME (TRN.RI41RDHP.AI01) -  
RELATE (TRN.RI41RDHP) -  
VOLUMES (PRV23F) -  
BUFFERSPACE (10240) -  
NODESTAGEWAIT -  
NOERASE -  
FREESPACE (20 20) -  
IMBED -  
KEYS (6 32) -  
RECORDSIZE (104 3373) -  
NOREPLICATE -  
NOREUSE -  
SHAREOPTIONS (2 3) -  
SPEED -  
STAGE -  
NONUNIQUEKEY -  
UPGRADE -  
NOWRITECHECK) -  
  DATA -  
    (CYLINDERS (2 1) -  
CONTROLINTERVALSIZE (4096) -  
UNIQUE) -  
  INDEX -  
    (TRACKS (1 1) -  
CONTROLINTERVALSIZE (2048))
```

Approximately 6847 records can be stored on each cylinder of prime disk space.

Prime space allocated = 2 cylinders = 13,694 record capacity.

Total space currently allocated = 2 cylinders + 1 track.

Number of records stored as of April, 1992 = 12,145

The Roadway History Cross-Section File

The roadway history cross-section file is a key-sequenced VSAM file. The records are variable-length from 170 to 4388 bytes.

The roadway history cross-section file has the following characteristics:

Data set name: TRN.RI41RDXP
Key position: 0 (first byte of record)
Keylength: 32
Maximum record length: 4388
Average record length: 745
Shareoptions: 2,3
% Freespace (CA,CI): 10,10
Control interval size: 22,528
Index space:1 track
Secondary index space: 1 track
Data space: As needed
Secondary data space:2 cylinder

The following job setup can be used to allocate the file. Note that the cross-section file is re-created every two weeks by a job scheduled by JES2.

```
//jobname JOB ....  
//EXEC PGM=IDCAMS  
//SYSIN DD *  
DEFINE CLUSTER (NAME(TRN.RI41RDXP) -  
INDEXED KEYS(32 0) RECSZ(745 4388) -  
VOL(volser) FSPC(10 10) REUSE SHR(2) ) -  
DATA (NAME(TRN.RI41RDXP.DATA) CISZ(4096) -  
CYLINDERS(data 2) SPEED ) -  
INDEX (NAME(TRN.RI41RDXP.INDEX) TRACKS(1 1) IMBED )
```

Approximately 955 records can be stored on each cylinder of prime disk space.

Prime space allocated = 40 cylinders = 38,200 record capacity.

Total space currently allocated = 43 cylinders + 1 track.

Number of records stored as of April, 1992 = 22,368

The Traffic File

The traffic file is a key-sequenced VSAM file. The records are variable-length from 35 to 395 bytes.

The traffic file has the following characteristics:

Data set name: TRN.RI42TRFP
Key position: 0 (first byte of record)
Keylength: 21
Maximum record length: 395
Average record length: 180
Shareoptions: 2,3
% Freespace (CA,CI): 20,20
Control interval size: 4096
Index space:3 tracks
Secondary index space: 1 track
Data space: As needed
Secondary data space:1 cylinder

The following job setup can be used to allocate the file:

```
//jobname JOB ....  
//EXEC PGM=IDCAMS,REGION=384K  
//SYSPRINT DD SYSOUT=2  
//SYSIN DD *  
DEFINE CLUSTER (NAME(TRN.RI42TRFP) -  
INDEXED KEYS(21 0) RECSZ(180 395) -  
VOL(PRV208) FSPC(20 20) REUSE SHR(2) ) -  
DATA (NAME(TRN.RI42TRFP.DATA) CISZ(4096) -  
CYLINDERS(125 1) SPEED ) -  
INDEX (NAME(TRN.RI42TRFP.INDEX) TRACKS(3 1) IMBED )
```

Approximately 3,956 records can be stored on each cylinder of prime disk space.

Prime space allocated = 125 cylinders = 494,500 record capacity.

Total space currently allocated = 125 cylinders + 4 tracks.

Number of records stored as of April, 1992 = 213,672

The ATR Data Libraries

The ATR data libraries are partitioned datasets. The records are fixed-length 80 bytes.

The ATR data libraries have the following characteristics:

Data set name: TRN.RI44ATRC (current year)
TRN.RI44ATRL (last year)
TRN.RI44ATRV (variable year)
Record format: FB (fixed-length blocked)
Record length: 80
Block size: 3120
Number of directory blocks: 40
Space allocated: 18 cylinders

The following job setup can be used to allocate a library:

```
//jobname JOB ....
// EXEC PGM=IEFBR14
//ATR DD UNIT=SYSDA,DISP=(NEW,CATLG),DSN=TRN.RIATR,
// DCB=(DSORG=PO,RECFM=FB,LRECL=80,BLKSIZE=3120),
// SPACE=(CYL,(18,,40)),VOL=SER=volser
```

The Weigh-In-Motion (WIM) File

The WIM file is a key-sequenced VSAM file. The records are fixed-length, 170 bytes.

The WIM file has the following characteristics:

```
Data set name: TRN.RI46WIMP
Key position:  0 (first byte of record)
Keylength:    10
Maximum record length: 170
Average record length: 170
Shareoptions:  2,3
% Freespace (CA,CI): 10,10
Control interval size: 4096
Index space:1 tracks
Secondary index space: 1 track
Data space: As needed
Secondary data space:1 cylinder
```

The following job setup can be used to allocate the file:

```
//jobname JOB ....
//EXEC PGM=IDCAMS,REGION=384K
//SYSPRINT DD SYSOUT=2
//SYSIN DD *
DEFINE CLUSTER (NAME(TRN.RI46WIMP) -
INDEXED KEYS(10 0) RECSZ(170 170) -
VOL(volser) FSPC(10 10) REUSE SHR(2) ) -
DATA (NAME(TRN.RI46WIMP.DATA) CISZ(4096) -
CYLINDERS(data 1) SPEED ) -
INDEX (NAME(TRN.RI46WIMP.INDEX) TRACKS(1 1) IMBED )
```

Approximately 4,189 records can be stored on each cylinder of prime disk space.

Prime space allocated = 5 cylinders = 20,945 record capacity.

Total space currently allocated = 6 cylinders + 1 track.

Number of records stored as of April, 1992 = 10,357.

The Sufficiency File

The Sufficiency file is a key-sequenced VSAM file. The records are variable-length up to 516 bytes.

The Sufficiency file has the following characteristics:

Data set name: TRN.RI48SUFP
Key position: 0 (first byte of record)
Keylength: 21
Maximum record length: 516
Average record length: 333
Shareoptions: 2,3
% Freespace (CA,CI): 10,10
Control interval size: 4096
Index space:1 tracks
Secondary index space: 1 track
Data space: As needed
Secondary data space:1 cylinder

The following job setup can be used to allocate the file:

```
//jobname JOB ....  
//EXEC PGM=IDCAMS,REGION=384K  
//SYSPRINT DD SYSOUT=2  
//SYSIN DD *  
DEFINE CLUSTER (NAME(TRN.RI48SUFP) -  
INDEXED KEYS(21 0) RECSZ(333 516) -  
VOL(volser) FSPC(10 10) REUSE SHR(2) ) -  
DATA (NAME(TRN.RI48SUFP.DATA) CISZ(4096) -  
CYLINDERS(data 1) SPEED ) -  
INDEX (NAME(TRN.RI48SUFP.INDEX) TRACKS(1 1) IMBED )
```

Approximately 2,138 records can be stored on each cylinder of prime disk space.

Prime space allocated = 7 cylinders = 14,966 record capacity.

Total space currently allocated = 8 cylinders + 1 track.

Number of records stored as of April, 1992 = 4,655.

The Sufficiency Hazards File -----

The Sufficiency Hazards file is a key-sequenced VSAM file. The records are fixed-length, 37 bytes.

The Sufficiency Hazards file has the following characteristics:

Data set name: TRN.RI48SUHP
Key position: 0 (first byte of record)
Keylength: 22
Maximum record length: 37
Average record length: 37
Shareoptions: 2,3

```
% Freespace (CA,CI): 10,10
Control interval size: 4096
Index space:1 tracks
Secondary index space: 1 track
Data space: As needed
Secondary data space:1 cylinder
```

The following job setup can be used to allocate the file:

```
//jobname JOB ....
//EXEC PGM=IDCAMS,REGION=384K
//SYSPRINT DD SYSOUT=2
//SYSIN DD *
DEFINE CLUSTER (NAME(TRN.RI48SUHP) -
INDEXED KEYS(22 0) RECSZ(37 37) -
VOL(volser) FSPC(10 10) REUSE SHR(2) ) -
DATA (NAME(TRN.RI48SUHP.DATA) CISZ(4096) -
CYLINDERS(data 1) SPEED ) -
INDEX (NAME(TRN.RI48SUHP.INDEX) TRACKS(1 1) IMBED )
```

Approximately 19,247 records can be stored on each cylinder of prime disk space.

Prime space allocated = 3 cylinders = 57,741 record capacity.

Total space currently allocated = 4 cylinders + 1 track.

Number of records stored as of April, 1992 = 25,894.

The Coordinates File -----

The Coordinates file is a key-sequenced VSAM file. The records are fixed-length, 42 bytes.

The Coordinates Hazards file has the following characteristics:

```
Data set name: TRN.RI50CORP
Key position: 0 (first byte of record)
Keylength: 21
Maximum record length: 42
Average record length: 42
Shareoptions: 2,3
% Freespace (CA,CI): 10,10
Control interval size: 4096
Index space:3 tracks
Secondary index space: 1 track
Data space: As needed
Secondary data space:1 cylinder
```

The following job setup can be used to allocate the file:

```
//jobname JOB ....
//EXEC PGM=IDCAMS,REGION=384K
```

```
//SYSPRINT DD SYSOUT=2
//SYSIN DD *
DEFINE CLUSTER (NAME(TRN.RI50CORP) -
INDEXED KEYS(21 0) RECSZ(42 42) -
VOL(volser) FSPC(10 10) REUSE SHR(2) ) -
DATA (NAME(TRN.RI50CORP.DATA) CISZ(4096) -
CYLINDERS(data 1) SPEED ) -
INDEX (NAME(TRN.RI48SUHP.INDEX) TRACKS(3 1) IMBED )
```

Approximately 16,955 records can be stored on each cylinder of prime disk space.

Prime space allocated = 5 cylinders = 84,775 record capacity.

Total space currently allocated = 6 cylinders + 3 tracks.

Number of records stored as of April, 1992 = 2,341.

The FACTOR-ADT-FILE Command

FACTOR-ADT-FILE uses existing volumes to compute new volumes for subsequent years. The factor used is in the format nn.n% per year. The FACTOR-ADT-FILE command is very flexible within certain limitations:

1. The program only adds volumes to existing records -- new records are never created.
 2. The resulting volume is always type "C" -- computer-generated.
 3. No factoring is done if the record already contains a volume type "A" (actual) or "E" (estimated) for the resulting year.
 4. The command will optionally factor AADT only, heavy commercial AADT only, or both.
- Other considerations:

- 1) If no volume exists for the result year, the following happens:
 - a. Unfactored volumes (AADT or HCADT) are transferred unchanged into the result volume.
 - b. Group is transferred into the result volume.
- 2) If a type C volume already exists for the result year, the following happens:
 - a. Factored volumes replace their counterparts in the result year.
 - b. Unfactored volumes are left unchanged in the result year.
 - c. Group is not transferred.
(This action allows one job to factor AADT, and a subsequent job to factor HCADT, using a different factor).
5. If the START-YEAR parameter is omitted, the source volume will be the most recent volume prior to the resulting year, subject to the other parameters. This means that the source year may vary from record to record.

The user must code a FACTOR parameter for trunk highways (route systems 01-03). Whenever the FACTOR parameter is used, it applies to all ADT records included by the ROUTES parameter. A table of factors exists for non-trunk systems (04-23) that will be referred to whenever the FACTOR parameter is omitted. The table should contain an entry for each county and each city in the following format:

Columns	Format	Data Element
1-2	blank	The remainder of the line may be used for comments.
3-6	xxxx	For route systems 04, 07-09, and 11-23: " nn" where nn is a county number. For route systems 05 and 10: "nnnn" where nnnn is the city number.
7 x	" "	(blank) if factor is positive, "-" if negative.
8-11	nn.n	Annual growth factor (%).

Depending on the route system, the proper county or city is determined from the route number for accessing the factor table. The table to be used is indicated by the "FACTORS" DD statement.

The command parameters for FACTOR-ADT-FILE include:

(Required) RESULT-YEAR=yyyy The year for which the volume is to be generated.

(Required) ROUTES subcommand (LIST classification)

(Optional) START-YEAR=yyyy The year to use as the source for factoring, and must precede the year in RESULT-YEAR.

(Optional) FACTOR=nn.n The only factor used if coded (otherwise use the table identified in DD statement FACTORS).

(Optional) ADT-ONLY Factor AADT only.

HCADT-ONLY Factor heavy commercial AADT only.

ADT-&-HCADT Factor AADT AND heavy commercial AADT (default).

Note: See above discussion on what is factored, what is transferred, and what is not changed.

(Optional) NO-LIST Do not produce any listing.

LIST-ALL List all factored volumes.

LIST-ERR List only records that could not be factored (default).

(Optional) TITLES subcommand

(Optional) Print formatting parameters: see chapter 4 of the User's Manual.

Sample Job Setups

The DTRIT catalogued procedure can be used to run FACTOR-ADT-FILE.

A sample job setup follows:

```
//JOBNAME JOB (ACCOUNT),'NAME',CLASS=C,NOTIFY=USER-ID,
// MSGCLASS=2,MSGLEVEL=(2,0)
/*JOBPARM ROOM=R820,LINES=5
/*ROUTE PRINT REDUCE
//TIS EXEC DTRIT,TIME=40,SCRSIZE=3,FORM='(A)',
// PRINTDD=TSO,OUTFILE=PRINTER,DISPTRF=OLD
//SYSIN DD *
:FACTOR-ADT-FILE,RESULT-YEAR=1986,FACTOR=10.0,
: LIST-ERR,START-YEAR=1983,ADT-&-HCADT
+ROUTES
ROUTE-SYS=01
/*
```

A sample job setup follows. It uses a factor table (defined in DD statement "FACTORS"):

```
//JOBNAME JOB (ACCOUNT),'NAME',CLASS=C,NOTIFY=USER-ID,
// MSGCLASS=2,MSGLEVEL=(2,0)
/*JOBPARM ROOM=R820,LINES=5
/*ROUTE PRINT REDUCE
//TIS EXEC DTRIT,TIME=40,SCRSIZE=3,FORM='(A)',
// PRINTDD=TSO,OUTFILE=PRINTER,DISPTRF=OLD
```

```
//SYSIN DD *  
:FACTOR-ADT-FILE,RESULT-YEAR=1986,  
: LIST-ERR,START-YEAR=1983,ADT-&-HCADT  
+ROUTES  
ROUTE-SYS=01  
/*  
//FACTORS DD DISP=SHR,DSN=DT00A2E.TSOLIB.CNTL(FACTORS)
```